

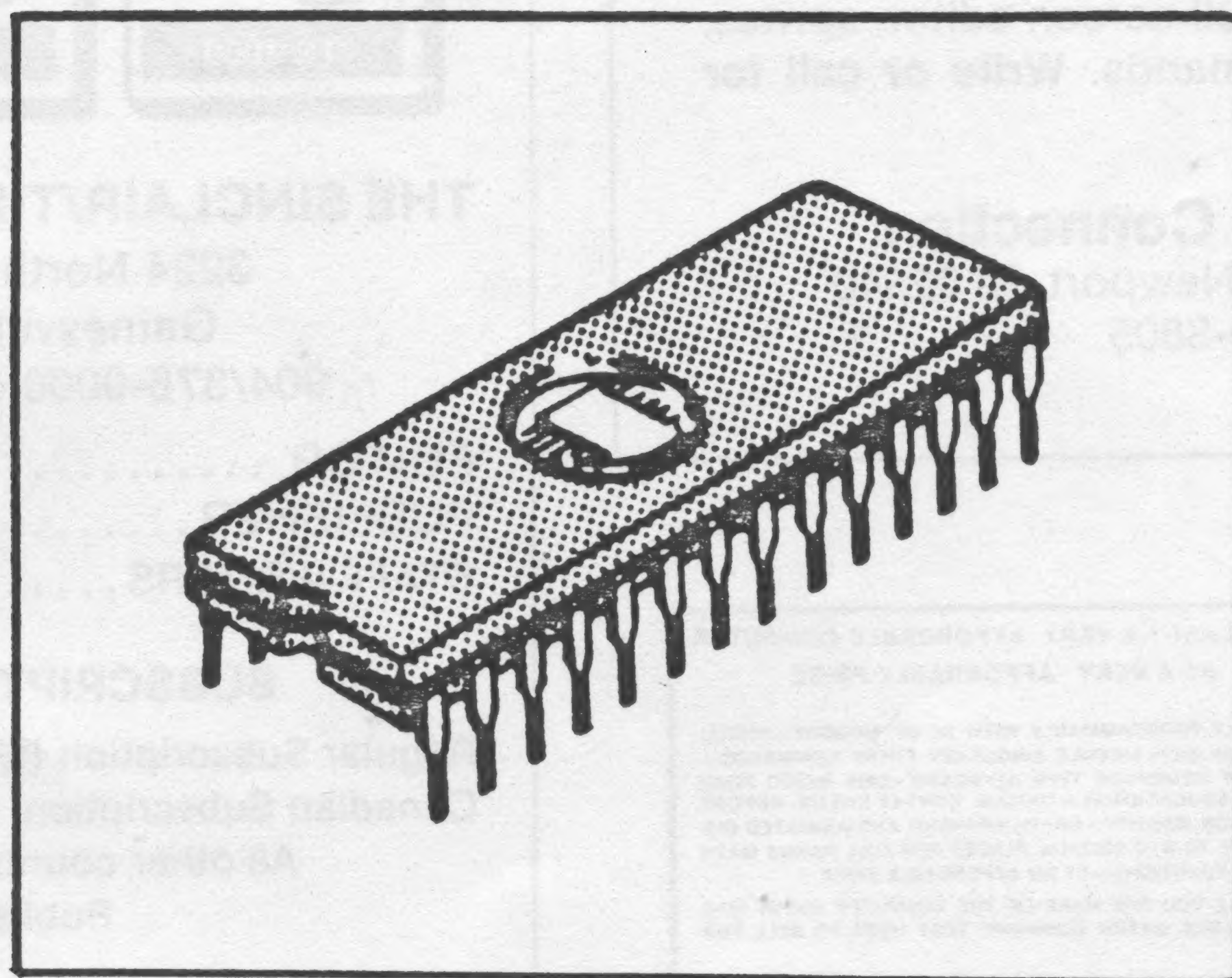
THE SINCLAIR/TIMEX USERS MAGAZINE

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Volume IV

June 1986

Number 6



EPROM Programmer You Can Build!
Using TASWORD II and Zebra Serial Port
Machine Code Tutor: A Review and More!

Yes! We Have the QL MOUSE!

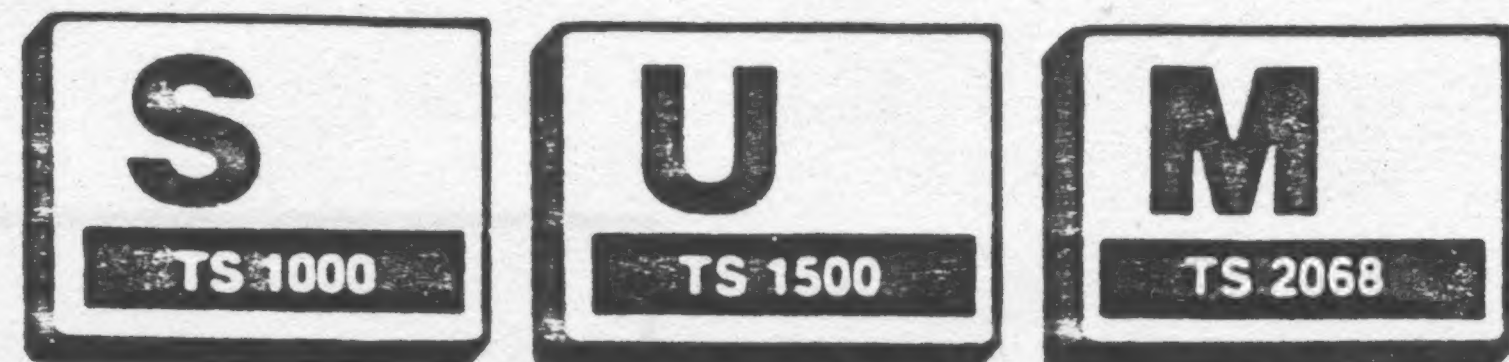
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LETTER FROM YOUR EDITOR AND PUBLISHER

We at SUM Magazine would like to thank all of you for the support you have shown over the past years. The activity in the Sinclair/Timex market seems to be ever growing, and it is exciting to see so many of you sticking with what many people consider to be a "dead" computer. This tells you something about the "power" of our computers that others just don't see!

Richard and I have found that you can't take the work that goes into this magazine lightly. What used to be just a simple part-time job has grown into one that requires full time attention. In the mean- time, both Richard and I have taken on more and more responsibility in our full- time jobs and are finding it more and more difficult to find the time that it takes to bring you the quality magazine that you have come to expect.

With this in mind, we have worked out an agreement with Time Designs Magazine where we will "merge" with them to bring you the largest and most comprehensive magazine in the U.S. Sinclair/Timex market. We, along with the staff of TDM will continue to bring you the quality reading you have come to expect. The July issue will be the last issue put out by SUM Magazine.

Time Designs Magazine will cover all subscriptions on through to their expiration date. Those who have a subscription to both SUM and TDM will have their subscription extended by the amount of time they have left with SUM. So you will have uninterrupted service of the best resource for your computer around.

Time Designs Magazine is dedicated to the Sinclair/Timex market with coverage on all Sinclair/Timex computers and they are continually expanding. They have top notch writers like Wes Brzozowski, Bob Orrfelt, and Michael Carver and publishing is their only business.

Tim Woods, the editor, along with his wife, Stephanie, the assistant editor, are looking forward to bringing you the best in news, articles, programs, projects, and advertisements available.

Richard and I are sorry that we had to come to this decision, but we both feel that it is the best for everyone involved and we hope that you will understand and support our endeavor to serve you best.

Thank you,
Joe Williamson
Richard Cravy

P.S. Congratulations To Tim and Stephanie on the birth of their son, Timothy Dean Woods, born on June 10th at a healthy eight pounds!

MACHINE CODE TUTOR: A Comprehensive Review

MACHINE CODE TUTOR for the 2068 is a program on two cassettes and consists of 35 lessons. The advertising states 33 lessons. Most of the lessons have demonstration and examples following them. The 34th just explains the interrupts and the 35th is just a sign off message.

After the program/simulator section is loaded, a prompt appears on the bottom of the screen asking you to choose whether or not to load lessons. You are not allowed to specify what lessons although the 24 page manual supplied gives you that impression. The lessons are broken up into four groups (lessons 1 to 9, lessons 10 to 17, lessons 18 to 25, and lessons 26 to 35).

When a group of lessons has been loaded in, a menu page appears on the screen after the introduction. A prompt now asks that if you want to run the line highlighted, to press ENTER and if you want to select another lesson, to press SPACE.

If you choose to run the lesson, text appears on the screen explaining the 280 commands the lesson is about. This may be a number of pages, after which, the menu returns to the screen with the next line highlighted. If that line is an example line and you key ENTER, you may get further text on the commands followed by a listing of the commands. That is followed by a screen containing an assembled program for demonstration.

Each line is arranged from left to right with the address in decimal, the contents of that address plus the contents of the following addresses that are tied in with that addresses' contents, a label if one has been specified, and then the mnemonics.

The bottom of the screen displays the contents of the four flags, stack, and the registers. Only the registers needed for the program are displayed.

When you choose to run the program listed by keying R(un), the top line of the program is highlighted and an explanation of what is to be done by that

group buy. When I asked the sales rep about comparisons between four types of tape, she sent a sample of each for me to try.

A test was run in this manner: using the Tasword II word processor program, I wrote a short article and SAVED it to each cassette, one after the other..Next, I cleared the text from memory, set the volume control arbitrarily at "7" and was unsuccessful in LOADING the text from a BASF LHD cassette. Undaunted, I reset it at "8" and got a good LOAD. This means that I only needed 80% of the volume compared to any previous LOAD! Well, if the BASF was that good, what would the Magnetite 12 do for me? Since the text was already SAVED, I set the volume control to "7" once again, cleared the text, and LOADED. It worked. Try "6". It worked, too! And with the Ampex 615/616 and Agfa 611/811 tapes could LOAD safely at "5" -- 50% of the volume required before the test!

No \$12 amplifier, no \$20 Winky Board, nothing more than more sensitive tape. Not only that, but the Agfa 615/616 C-10 tape cost only 34.9 cents per cassette when bought in a lot of 100, even less in greater quantities.

This is an unsolicited testimonial, not an advertisement. User groups or individuals who would like to get in on a good thing should call Polyline Corporation at 312/298-5300 or 312/297-0955 and ask for a free catalog #85P1. The rest is up to you.

-- John L. Donaldson

program. Anything outside of this will give an error statement. Even if you write a program into the assembler, there is no way to save it or get a printout of it.

Although the title screen calls it THE COMPLETE MACHINE CODE TUTOR, I do not consider it a complete tutor. I did learn to do various things with the display and attribute file. I also got the idea of how the computer prints characters to the screen, but I did not learn how it searches for a character keyed in.

By the way, the cassettes they send you do not have the tabs broken out so there is a great possibility that you could erase the whole cassette if you press the record button when you start to play the tape.

Available from Knighted Computers, 707 Highland St., Fulton, NY 13069 (315) 593-8219

James Brezina
Elmhurst, IL

Review: GHOSTBUSTERS!

Quick...what do you get when you match the most profitable comedy movie ever (over \$200 million) with the programming genius of David Crane (PITFALL, KABOOM! and more)?

Times up..."who 'ya gonna call?... GHOSTBUSTERS!"

Yes, those people at ACTIVISION have freed the "slimers", and its your job to rid Gotham City of the spooks, and accumulate as much money as possible. All while you attempt to keep the Keymaster and the Gatekeeper from meeting at the Temple of Zuul. Sounds easy, doesn't it?

I had seen, and played, GHOSTBUSTERS in its Commodore version before receiving the Spectrum tape. This made me very anxious to see if the game had lost anything in translation.



I was not disapointed. The graphics are excellent...almost identical to the Commodore version. The voice synthesis was there too. From "He slimmed me!" to the ghostly laugh the conversion had lost nothing.

The only shortcoming was the music. But remember, this is a Spectrum program, and the Spectrum has only one sound channel. Had this program been written for the 2068, I know the music would have matched or exceeded the Commodore version.

To synopsize, the object of GHOSTBUSTERS is this: You are given a \$10,000 loan from the bank to open a Ghostbusters franchise. You select the vehicle and other various equipment you need to patrol the streets of the city, and clean up the spectres (Spectrum spectres?!?).

Now for some great news...GHOSTBUSTERS will run on the 2068 without a Spectrum ROM! Once loaded, GHOSTBUSTERS displays a menu from which the proper joystick interface/keyboard input is selected. If you select the keyboard, the game will run perfectly on the 2068. Of course, if you do have a ROM, and a Russell Gamesmate interface, the game is even more exciting!

I give GHOSTBUSTERS high marks on all criteria: Concept, Design, Content, and Execution (sounds like the Olympics, doesn't it?).

GHOSTBUSTERS is great! If you liked the movie, you'll LOVE the game! Available from E. Arthur Brown Company, 3404 Pawnee Dr., Alexandria, MN 56308 and The English Micro Connection, 15 Kilburn Ct., Newport, RI 02840 (401) 849-3805.

-- Bill Ferrebee

HARDWARE PROJECT: EPROM Programmer You can Build

The cartridge dock of the 2068 was supposed to open up a whole new dimension in instant loading software when Timex introduced it oh so long ago. There were very few cartridges available and what was wasn't worth it. Then came along Doug Dewey's Spectrum emulator which made excellent use of it. Now more recently, OS-64 from Zebra demonstrates another good example.

The cartridge dock supports LROS (Language ROM Oriented Software) and AROS (Application ROM Oriented Software). The Spectrum emulator and OS-64 are both good examples of LROS and all the programs such as those put out by Timex, Sunset Electronics, and Tom Woods' ProFile on cartridge are all good examples of AROS.

With this EPROM programmer, you can develop your own LROS and AROS cartridges. The EPROMs will plug into Doug Dewey's EMU series, Sunset's EPROM boards, and Foote Software's Printer interface EPROM socket.

The programmer will program 2764 (8Kx8) and 27128 (16Kx8) EPROMs and with some slight modification, will program the 2716, 2732, and the 27256 EPROMs. The 2068 and Spectrum ROMs are the 27128 configuration and the 2068 extension ROM is configured as a 2764.

You need to use 250 or 300nS type EPROMs which are designated as 27128-25 or 27128-3. This is the highest speed at which they will operate and must be able to operate faster than the 2068 will access them so they can keep up!

To program these particular EPROMs, you need a 21 volt programming voltage. The 2068's power supply is rated at 15 volts with a one amp load. With nothing connected, it measures 22-23 volts. With it loaded down by a 2068 and a printer interface, disk drive and this interface, it measures between 20 and 20.5 volts. I have been using this voltage to program EPROMs and have had no trouble.

I checked a number of 2068s and power supplies to see if these findings were consistent, they were, so the 2068's power

supply should work well for you too. If for some reason it does not, the TS2040's power supply and a regulator circuit will work fine.

Programming the EPROM is a fairly simple task of providing the 21 volt programming voltage, setting the address lines to the desired address you wish to program data to, placing data on the data lines and then making the program line go low for about 50 mS (1/20 sec).

With this interface, you can set the starting address of the EPROM where you want the programming to begin, set the starting address in the computer's memory you wish to program from and set the number of locations you wish to program. A very simple system that will allow you to use this interface with any Sinclair computer or other computers for that matter as long as the correct programming voltage is supplied to the EPROM.

The heart of the programmer is the decoder which creates the ports from which control to different parts of the programmer are obtained. I chose a 74LS138 3 to 8 line decoder which I used to fully decode I/O ports 0-7. Not all the ports are needed, so a few can be used for another project later. I chose the following ports for this project:

PORT 0: READ EPROM
PORT 2: LOW BYTE ADDRESS
PORT 3: HIGH BYTE ADDRESS
PORT 4: PROGRAM EPROM
PORT 5: INCREMENT ADDRESS

Because we are programming a 14 bit EPROM from an 8 bit source, we must load the EPROM starting address in two steps. First the lower 8 bits and then the upper 6 bits. If we want to start at say address 10,000 decimal (2710 hex), we need to load the high byte as OUT 3,39 (27h) and the low byte as OUT 2,16 (10h). How do we come up with those numbers? High byte = $\text{INT}(10,000/256)=39$ & Low byte = $10,000-256*\text{INT}(10,000/256)=16$. You can convert these numbers to hex by looking in appendix B on page 239 in the 2068 User's manual.

From the schematic, we can see that these low and high bytes are loaded into 74LS193 presetable counters which can then be incremented by sending an OUT command to port 5. Port 0 is used with the IN command to read the EPROM and port 4 is used with the OUT command to write data to the specified address.

The 74LS245 (a) is used primarily as a buffer to keep from loading down the data buss of the 2068. The 74LS245 (b) is used to isolate latched program data from the buss. The 74LS374 is used to latch or hold data to be programmed. The 74LS221 is used as a pulse generator to give the 50 mSec pulse needed by the EPROM during programming. The 74LS27 and 74LS08 are used in conjunction with the 74LS138 to give full decoding of the I/O ports.

The programming voltage from the 2068 goes through a resistor and 22 volt zener diode to help protect both the 2068 and EPROM. A 0.1 microFarad tantalum capacitor helps cut down on transient voltages and five volts feeds the line through a diode so that the EPROM can be read when not in the program mode. I tried lowering the program voltage some to see how much effect it would have and found that I could go as low as 18 volts and still have reliable programming. This may vary from manufacturer to manufacturer though. I have been using Hitachi # HN4827128G-25.

The Zebra Systems Protocard makes an excellent board to mount this project on. I used a proto board to develop the programmer and later transferred it to a Protocard. Keep the leads as short as possible when wiring the circuit and be carefull not to cause any shorts, solder bridges, frayed wires, etc. Remember, this project deals with the data and address buss of the computer and mistakes can easily ruin the computer.

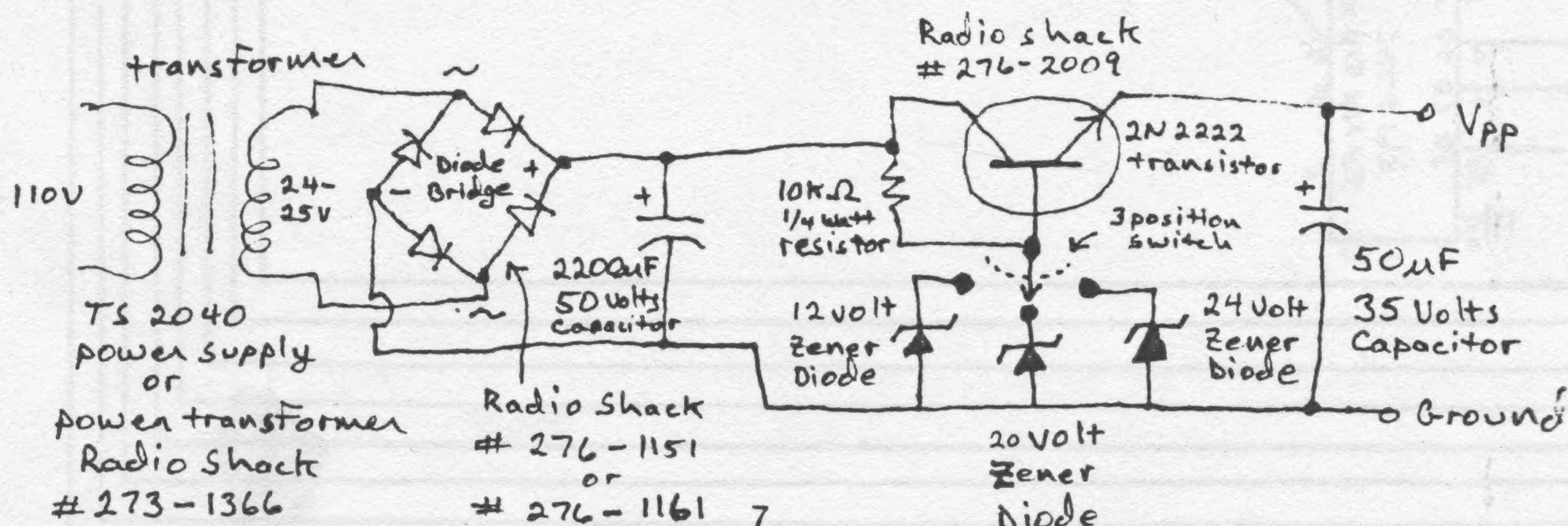
To program the 2716, you need a 25 volt power supply and to program the 27256, you need 12.5 volts. Here is a wiring diagram to use the TS 2040 printer power supply or any 25 volt secondary transformer for the programming supply.

The 2716 and 2732 EPROMs are in a 24 pin package with pins 1-12 & 13-24 corresponding to pins 3-14 & 15-26 of a 28 pin package. The Vcc is moved from pin 28 to 24. All the pins remain pretty much the same except for the highest address line and PGM which move some from EPROM to EPROM depending on its size. These changes can be realized by using wire jumpers or switches.

Because the 2068 uses ROMs, some of the pins are slightly different. To use an EPROM in place of the ROM, pins 1 & 27 of the EPROM need to be bent upward (away from socket) and connected together and connected to pin 28 so that they are all connected to Vcc (5 volts).

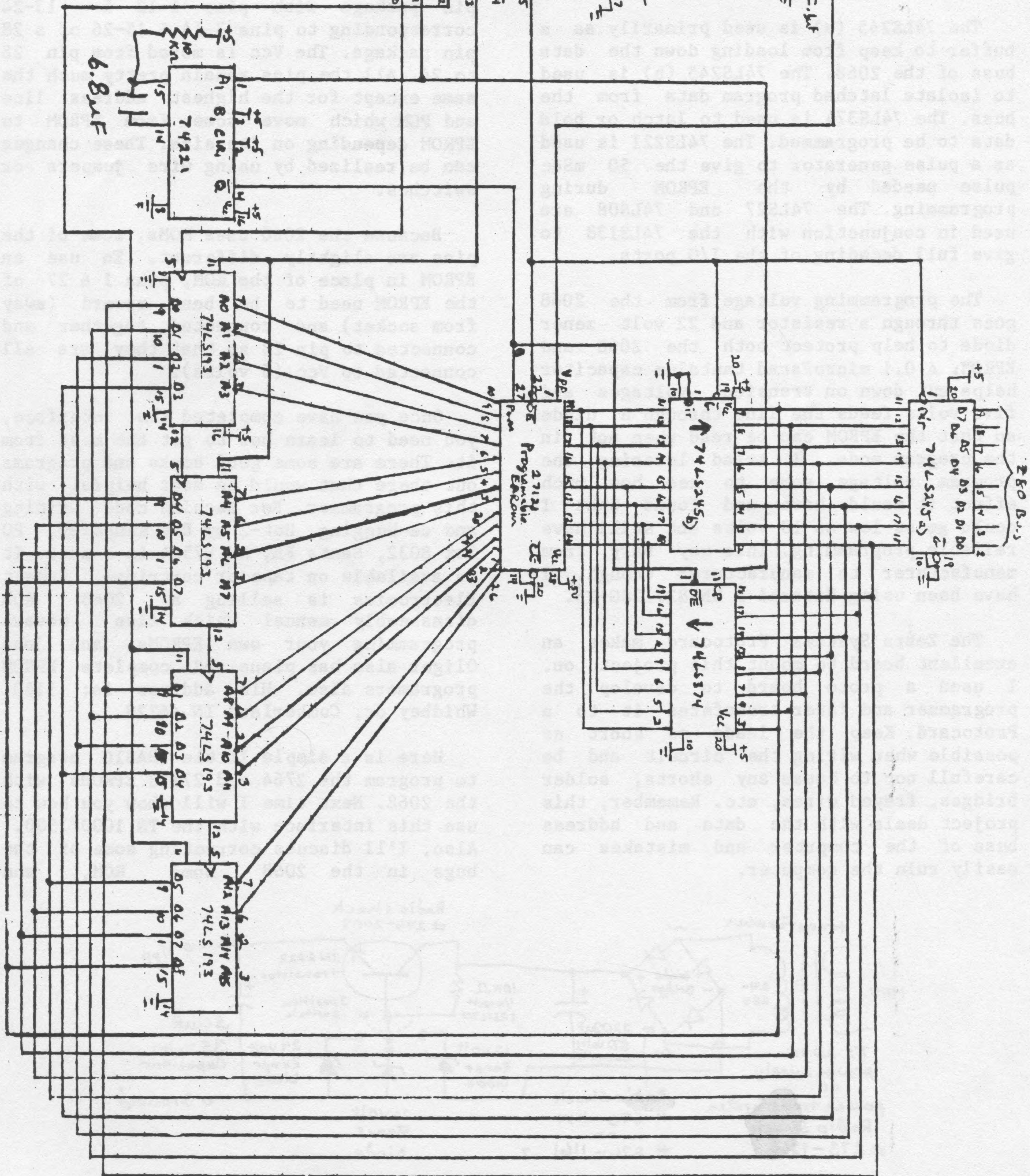
Once you have completed the interface, you need to learn how to get the most from it. There are some good books and programs out there that would be most helpful with this programmer. For machine code writing and de-bugging, Hot-Z by Ray Kingsley, PO Box 8032, Santa FE, NM 87504 is a must. It is available on tape or cartridge. Sunset Electronics is selling a 2068 ROM disassembly manual which also covers programming your own EPROMs, and John Oliger also has plans and complete EPROM programmers also. His address is: 11601 Whidbey dr, Cumberland IN 46229.

Here is a simple little BASIC program to program the 2764 and 27128 EPROMs with the 2068. Next time I will show you how to use this interface with the TS 1000/1500. Also, I'll discuss correcting some of the bugs in the 2068 home ROM, and



The diagram shows a 4-bit parallel adder circuit. It consists of the following components and connections:

- 74138 (3-to-8 decoder):**
 - Inputs: A_2 (pin 1), A_1 (pin 2), A_0 (pin 3).
 - Control inputs: $\overline{E_1}$ (pin 4) to ground, $\overline{E_2}$ (pin 5) to ground, $\overline{E_3}$ (pin 6) to ground.
 - Outputs: Y_0 (pin 12) to ground, Y_1 (pin 13) to ground, Y_2 (pin 14) to ground, Y_3 (pin 15) to ground, Y_4 (pin 10) to ground, Y_5 (pin 11) to ground, Y_6 (pin 9) to ground, Y_7 (pin 8) to ground.
- 7427 (NAND gate):**
 - Inputs: A_3 (pin 1), A_2 (pin 2).
 - Output: Y_3 (pin 6) to ground.
- 7408 (NAND gate):**
 - Inputs: A_3 (pin 1), A_2 (pin 2).
 - Output: Y_4 (pin 6) to ground.
- 7408 (NAND gate):**
 - Inputs: A_3 (pin 1), A_2 (pin 2).
 - Output: Y_5 (pin 6) to ground.
- 7408 (NAND gate):**
 - Inputs: A_3 (pin 1), A_2 (pin 2).
 - Output: Y_6 (pin 6) to ground.
- 7408 (NAND gate):**
 - Inputs: A_3 (pin 1), A_2 (pin 2).
 - Output: Y_7 (pin 6) to ground.



transferring your own programs to EPROM.

```

10 REM EPROM PROGRAM
15 REM Read EPROM
15 INPUT "enter 0 to read EPROM
    enter 1 to write to
EPROM: " type
10 IF type THEN GO TO 100
20 INPUT "enter start address
OF ROM(0) " :S
30 GO SUB 1000
40 INPUT "enter length of code
(0) " :len
50 FOR n=0 TO len-1
60 PRINT S+n,IN 0
70 OUT 0,0
80 NEXT n
90 GO TO 15
100 ROM PROGRAM
110 INPUT "enter memory start i
OF (0) " :m: LET mv=m
120 INPUT "enter start address
OF ROM(0) " :S
130 GO SUB 1000
140 INPUT "enter length of code
(0) " :len
150 FOR n=0 TO len-1
160 LET d=PEEK m: LET m=m+1
170 OUT 4,d
180 PAUSE 4
190 OUT 0,0
200 NEXT n
210 PRINT "programmed"
220 REM Verify
230 GO SUB 1000
240 FOR n=0 TO len-1
250 LET d=PEEK mv: LET mv=mv+1
260 IF d<>S THEN PRINT S+n:
270
280 OUT 0,0
290 NEXT n
300 PRINT "verified"
310 STOP
320 OUT 2,INT (S-256)/INT (S/256)
330
340 OUT 3,INT (S/256)
350 RETURN

```

— Vendor Report —

Curry Computer is now the U.S. distributor for Pyramide Software of Paris France. Curry now has their first program for the QL: WANDERER, a three dimensional graphics program for an RGB color monitor. The program comes with 3D glasses and gives the impression of the display "floating" somewhere between your computer and your monitor. It is also the winner of the "Sinclair User Classic" award.

Other titles from Pyramide include: NUCLEON: a utility package which includes drawing programs, a music editor, a window and icon development program, and a character generator program.

QL PEINTRE: a graphics package that rivals MacPaint but with full color options and displays.

VROOM: a racing game similar to Hyperdrive and Pole Position.

MORTVILLE'S MANOR: a text and graphics adventure detective game.

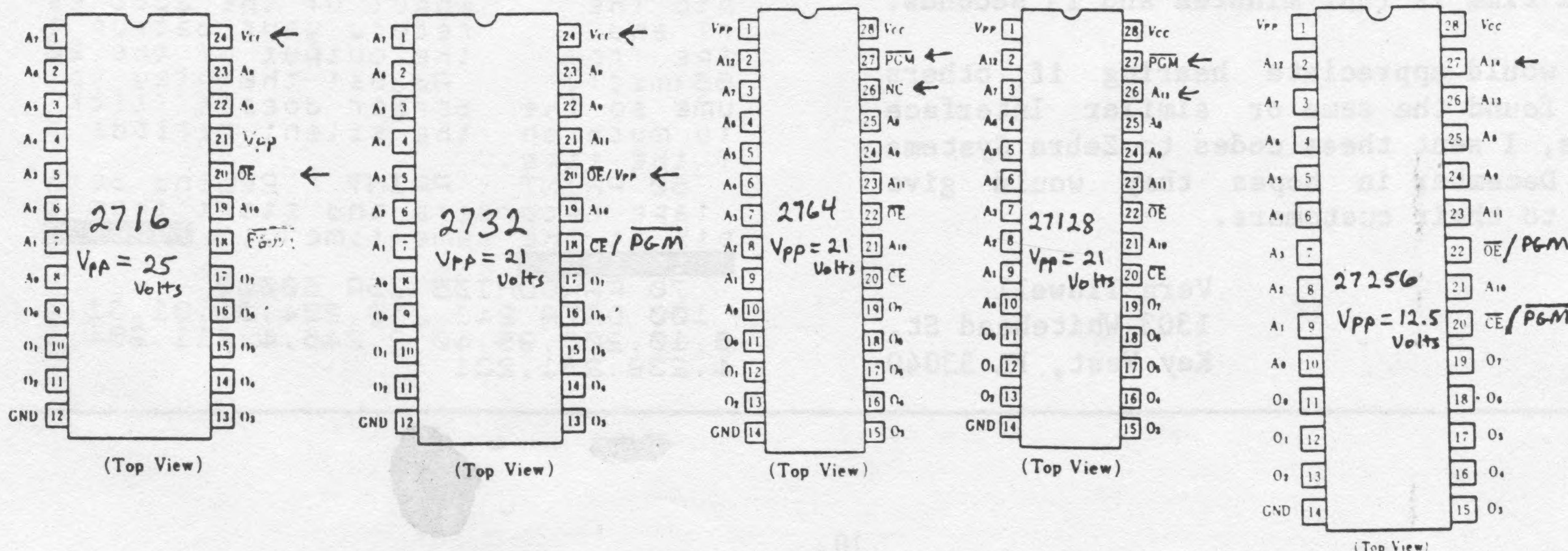
Curry Computer can be reached at PO BOX 5607, Glendale, AZ 85312-5607 (602) 978-2902

Amateur Radio Programs are available for the Spectrum from Fron, Upper Llandwrog, Caernarfon, Gwynedd LL54 7RF, England. TEL: 0286 881886

Some titles include: MORSE TUTOR, LOG-BOOK, LOCATOR, R.A.E. MATHS, RTTY & TRANSCIVE, RX-4 MULTIMODE RECEIVE.

Various EPROM pin configurations of most popular EPROMs

note differences & similarities between pins as memory size changes



Using TASWORD II with the Zebra Serial Ports

In your article "Reviewing Two Printers", SUM April '86, you asked for information on the serial port of the Zebra Disk Drive after referring to TASWORD II output to that RS-232 serial port.

I have been using that port since last October '85 along with TASWORD II and a Radio Shack serial printer. The "key" was the "Interface Control Codes" as accessed from TASWORD II program menu:

```
Interface control Code 1 = 0
                      Code 2 = 0
                      Code 3 = 0
                      Code 4 = 57855
```

The codes will get one off and running assuming the correct formatting of CHANNEL A is accomplished to agree with whatever printer is being used and the TOS LPRINT CODE has also been loaded. I would suggest an insert to line 15 of TASWORD II. After the command LOAD "*"tasword.cod"CODE: add this or similar commands pertaining to your setup:

```
LOAD*"lprint.cod"CODE 23297:FOR n=23322 TO
23325: POKE n,0: NEXT n: RANDOMIZE USR
23297: OPEN *#3;"":ch_a";o: CLS LET a=USR
VAL"59081": GO TO VAL "10"
```

I am using the Radio Shack DMP 130 and think that it is great, although I had to design my own screen dump program to take the place of the COPY command as used with the TS 2040. My screen dump checks all 45,045 points on the screen and prints only the INK colored points in graphics mode; total time is four minutes and 15 seconds.

I would appreciate hearing if others have found the same or similar Interface Codes, I sent these codes to Zebra Systems last December in hopes they would give them to their customers.

Vern Tidwell
1303 Whitehead St.
Key West, FL 33040

Tape Backup

Here is a program from Larry Kenny of Larken Electronics to backup any 2068 program. The program requires two tape recorders, one to play the tape, and one to record the program. The program can be located anywhere in free memory. Follow the instructions as given in the program. Once the code is set, it can be SAVED and LOADED separately and called by RAND USR x, where x is the starting point of the code. Here is the machine code listing:

```
0010  ORG 60000
0020  ENT
0030  start IN A, 254
0040      RRA
0050      RRA
0060      RRA
0070      JR NC,exit
0080      BIT 3,A
0090      JR Z,zero
0100      OR 4
0110  zero  OUT 254,A
0120      JR start
0130  exit  EI
0140  RET
```

1 REM Tape To Tape backup
Program using 2 tape recorders

by LARRY KENNY

```
10  CLEAR 60000
20  FOR a=60000 TO 60019
25  READ x: POKE a,x
30  NEXT a: CLS
40  PRINT " This Program is fo
r making tape to tape copies
using the 2068 as a signal rec
onditioner": PRINT
50  PRINT " Using 2 tape recor
der's, play the original tape i
nto the input of the 2068 (ea
r) and record your backup t
ape from the output of the 20
68 (mic). Adjust the play vol
ume so the border doesnt flick
to much on the silent periods o
f the tape."
60  PRINT : PRINT " Rewind both
tape recorders and start them b
oth at the same time",,"
70  RANDOMIZE USR 60000
100 DATA 243,219,254,31,31,31,4
8,10,200,95,40,2,246,4,211,254,2
4,239,251,201
```


More Color!

In reference to your program in the March issue on creating extra colors on the 2068, here are a couple of programs which build on that one.

The first one gives full screen displays of all the colors possible, and the second one gives eight different screen displays, each display is broken down into 8 different colors.

To RUN program one, use GO TO 120. To RUN the second one, use GO TO 150. Line 142 is 32 "hash" marks, lines 156 & 162 contain eight "hash" marks in each block. P= PAPER color, I= INK color. These programs really only work on an RGB color monitor.

Ray Roberts
NYC

```

000 REM "COLORPLUS"
001 REM " "
002 REM " "
003 REM " "
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006 REM " "
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008 REM " "
009 REM " "
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199 REM " "
200 REM " "

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```

160 FOR L=11 TO 21
162 PRINT AT L,P; PAPER P; INK
4:"";AT L,P+8; INK 5;"
";AT L,P+16; INK 6;"
";AT L,P+24; INK 7;"
164 NEXT L
166 PRINT AT 8,14;"P=";P; PRINT
AT 10,3;"I=";AT 10,11;"I=";AT
10,19;"I=";AT 10,27;"I="
168 PRINT AT 21,3;"I=";AT 21,
1:"I=";AT 21,19;"I=";AT 21,27;
"I="
170 BEEP :00,00: PAUSE 200: CLS
: NEXT P: GO TO 152
180 BEEP :00,00: SAVE "COLORPLU
S": PAUSE 100: GO TO 180

```

Helpful Household Program

Medicare helps you keep track of your medical bills from hospitals, doctors, and prescriptions and your coverage from Medicare and insurance. It also has a section on how to file with Medicare and keeping up with their payments. submitted by W.J. Ward of Grand Island, Florida.

[illegible]


```

1000 IF B=0 THEN GO SUB 4500
1010 IF B<>1 OR B<>2 OR B<>3 OR
1020 OR B<>5 THEN GO TO 20
1030 CLS
1040 INPUT "enter current month"
1050 INPUT "how many doctor enter"
1060 IF A=0 THEN GO TO 1150
1070 FOR X=1 TO A
1080 INPUT B(X)
1090 PRINT B(X)
1100 T1=T1+B(X)
1110 NEXT X
1120 PRINT T1;TAB 6;"total doctor"
1130 INPUT "how many hospital pay"
1140 IF A=0 THEN GO TO 1250
1150 FOR X=1 TO A
1160 INPUT B(X)
1170 PRINT B(X)
1180 T2=T2+B(X)
1190 NEXT X
1200 PRINT T2;TAB 6;"total hospital"
1210 INPUT "how many prescription"
1220 IF A=0 THEN GO TO 1350
1230 FOR X=1 TO A
1240 INPUT B(X)
1250 PRINT B(X)
1260 T3=T3+B(X)
1270 NEXT X
1280 PRINT T3;TAB 6;"total presc"
1290 INPUT "how many medicare pay"
1300 IF A=0 THEN GO TO 1450
1310 FOR X=1 TO A
1320 INPUT B(X)
1330 PRINT B(X)
1340 T4=T4+B(X)
1350 NEXT X
1360 PRINT T4;TAB 6;"total medic"
1370 INPUT "how many insurance pay"
1380 IF A=0 THEN GO TO 1500
1390 FOR X=1 TO A
1400 INPUT B(X)
1410 PRINT B(X)
1420 T5=T5+B(X)
1430 NEXT X
1440 PRINT T5;TAB 6;"total insur"
1450 PRINT TAB 6;"YEAR-TO-DATE";
1460 PRINT TAB 6;"THRU...";
1470 PRINT TAB 6;"-----";
1480 PRINT

```

```

1012 PRINT TAB 6;"doctors chgs:"
1014 LET N=T1: GO SUB 7000: LET
1016 PRINT TAB 6;"hospital chgs:"
1018 LET N=T2: GO SUB 7000: LET
1020 PRINT TAB 6;"prescrip. chgs"
1022 LET N=T3: GO SUB 7000: LET
1024 PRINT TAB 6;"-----"
1026 LET X=T1+T2+T3
1028 PRINT TAB 6;"total medicare"
1030 LET N=X: GO SUB 7000: LET X
1032 PRINT
1034 PRINT "*****"
1036 PRINT TAB 6;"medicare paid:"
1038 LET N=T4: GO SUB 7000: LET
1040 PRINT TAB 6;"insurance paid"
1042 LET N=T5: GO SUB 7000: LET
1044 PRINT TAB 6;"-----"
1046 LET T=T2+T4
1048 PRINT TAB 6;"total recovere"
1050 LET N=T: GO SUB 7000: LET
1052 PRINT
1054 PRINT "*****"
1056 LET T=T1+T2+T3+T4+T5
1058 PRINT TAB 6;"net cost:"
1060 LET N=T: GO SUB 7000: LET T
1062 PRINT
1064 PRINT T1;TAB 6;T2;TAB 6;T3;TAB 6;T4;TAB 6;T5;TAB 6;T
1066 PRINT TAB 6;"do you wish to copy?"
1068 IF A="C" THEN COPY
1070 IF A="C" THEN GO TO 4000
1072 CLS
1074 PRINT "*****"
1076 PRINT "*****"
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1080 PRINT "*****"
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2000 PRINT "*****"

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2135 LET tth=tth+h(X)
2140 LET th=th+h(X)
2145 NEXT X
2150 PRINT th;TAB 5;"total hosp.
    chgs"
2155 INPUT "how many prescriptio
    n chgs? ";q
2155 IF q=0 THEN GO TO 2290
2160 PRINT "enter prescr. chgs"
2165 FOR X=1 TO q
2170 INPUT p(X)
2175 PRINT p(X)
2180 LET tip=tip+p(X)
2185 LET tp=tp+p(X)
2190 NEXT X
2195 PRINT tp;TAB 5;"total presc
    r. chgs"
2200 INPUT "how many medicare pa
    yments? ";q
2200 IF q=0 THEN GO TO 2390
2205 PRINT "enter medicare payme
    nts received"
2210 FOR X=1 TO q
2215 INPUT m(X)
2220 PRINT m(X)
2225 LET tim=tim+m(X)
2230 LET tm=tm+m(X)
2235 NEXT X
2240 PRINT tm;TAB 5;"total medic
    are paid"
2245 INPUT "how many insurance p
    ayments? ";q
2245 IF q=0 THEN GO TO 2400
2250 PRINT "enter insurance paid"
2255 FOR X=1 TO q
2260 INPUT i(X)
2265 PRINT i(X)
2270 LET tti=tti+i(X)
2275 LET ti=ti+i(X)
2280 NEXT X
2285 PRINT ti;TAB 5;"total insur
    ance paid"
2290 PAUSE 0
2295 GO TO 10
2300 CLS
2305 PRINT TAB 0; FLASH 1;"ANALY
    SIS:"; FLASH 0
2310 PRINT TAB 0;"=====
2315 PRINT TAB 0;"thru: ";me
2320 PRINT TAB 0;"-----"
2325 LET ttt=tth+tti+tip
2330 PRINT TAB 0;"TOTAL charge
    s:"
2335 LET n=ttt: GO SUB 8000: LET
    tim=n
2340 LET j=(INT 100+(tim/tic)): LET n=
    j: GO SUB 7000: LET j=n
2345 PRINT TAB 31;"%"
2350 PRINT TAB 0;"-----"
2355 PRINT
2360 PRINT "doctors chgs:"; LET
    n=tip: GO SUB 8000: LET tim=n
2365 LET j=(INT 100+(tim/tic)):
    LET n=j: GO SUB 7000: LET j=n
2370 PRINT TAB 31;"%"
2375 PRINT "hosp. chgs:"; LET n
    =tp: GO SUB 8000: LET tim=n
2380 LET j=(INT 100+(tim/tic)):
    LET n=j: GO SUB 7000: LET j=n
2385 PRINT TAB 31;"%"
2390 PRINT TAB 0;"prescr. chgs:"
    ; LET n=tip: GO SUB 8000: LET
    tim=n
2395 LET j=(INT 100+(tim/tic)):
    LET n=j: GO SUB 7000: LET j=n
2400 PRINT TAB 31;"%"
2405 PRINT "-----"
2410 PRINT "+++++"
2415 PRINT "+++++"
2420 PRINT "+++++"

```

```

4057 PRINT TAB 0; FLASH 1;"TOTAL
    recovered:";
4058 LET j=(tim+tti): LET n=j: G
    O SUB 8000: LET j=n
4070 LET j=(INT 100+(tim+tti)/ti
    c)
4071 LET n=j: GO SUB 7000: LET j
    =n
4072 PRINT TAB 31;"%"
4074 PRINT TAB 0;"-----"
4075 PRINT TAB 0;"medicare pd:";
4077 LET n=tim: GO SUB 8000: LET
    tim=n
4078 LET j=(INT 100+(tim/tic)):
    LET n=j: GO SUB 7000: LET j=n
4080 PRINT TAB 31;"%"
4085 PRINT TAB 0;"insurance pd:"
    ;
4086 LET n=tti: GO SUB 8000: LET
    tti=n
4087 LET j=(INT 100+(tti/tic)):
    LET n=j: GO SUB 7000: LET j=n: P
    RINT TAB 31;"%"
4088 PRINT "-----"
4092 PRINT FLASH 1;"my NET cost:
    "; FLASH 0;
4094 LET nctm=(tic-tim-tti): LET
    n=nctm: GO SUB 8000: LET nctm=n
4095 LET nctm=(INT 100+(nctm/tic
    )): LET n=nctm: GO SUB 7000: LET
    nctm=n
4096 PRINT TAB 31;"%"
4098 PRINT
4100 INPUT "do you wish to copy?
    ";K4
4110 IF K4="Y" THEN COPY
4120 IF K4<>"Y" THEN GO TO 10
4130 GO TO 10
4140 CLS
4150 PRINT "Procedure for using
    claim forms."
4160 PRINT
4170 PRINT TAB 5;"1) Secure medi
    care form","from dr. and/or hosp
    ital"
4180 PRINT : PRINT TAB 5;"2) mai
    l medicare form","attach copy o
    f dr. bill and/or","hospital bil
    l"; INPUT "has this been done? Y
    or N";K4
4190 IF K4="Y" THEN CLS : GO TO
4200
4210 IF K4<>"Y" THEN CLS : PRINT
    "When you do mail your medicare
    form & bills, try this progre
    m","again."
4220 PAUSE 0: GO TO 10
4230 PRINT : PRINT TAB 5;"3) whe
    n medicare returns","form, for c
    heck and form then","fill out t
    he insurance claim","form."
4240 PRINT : PRINT TAB 5;"4) hav
    e copies made of","medicare ret
    urned form, dr.,""bills, hospi
    tal bills, and","the insurance
    claim form."
4250 PRINT : PRINT TAB 5;"5) mai
    l all forms from","item #4, to i
    nsurance company"
4260 PRINT : PRINT TAB 5;"6) kee
    p copies of all forms submitted"
4270 INPUT "have you done steps
    2 thru 6? Y/N";K4
4280 IF K4="Y" THEN CLS : PRINT
    "OK. now allow 4-5 weeks to","re
    ceive a report from medicare.";
    PRINT : PRINT "press ENTER": PAU
    SE 424

```



```

4590 CLS : PRINT "after 4 to 5 w
eeks with no", "response, call me
dicare on", "their 800 number. Be
sure to", "have your copies at h
and so", "you can supply informati
ion", "for tracing."
4595 PRINT : PRINT "press any ke
y to continue": PAUSE 424
4700 RETURN
5000 SAVE "Medicare 2" LINE 0
5010 GO TO 10
7000 LET I$=STR$ INT N
7100 LET X$=STR$ (INT ((N-INT N)
*100+.01/100))
7200 PRINT TAB 27-LEN I$; I$ AND
X$;" "; (STR$ (VAL I$+1) AND X
$="1");" ".00" AND (X$="0" OR X$=
"1");X$;10 AND X$(10)=".";1+12 AN
D (X$(10)="0" OR X$="1") TO 1;
7300 IF LEN X$=2 THEN IF X$(2)="
." THEN PRINT "0"
7400 RETURN
8000 LET I$=STR$ INT N
8100 LET X$=STR$ (INT ((N-INT N)
*100+.01/100))
8200 PRINT TAB 20-LEN I$; I$ AND
X$;" "; (STR$ (VAL I$+1) AND X
$="1");" ".00" AND (X$="0" OR X$=
"1");X$;10 AND X$(10)=".";1+12 AN
D (X$(10)="0" OR X$="1") TO 1;
8300 IF LEN X$=2 THEN IF X$(2)="
." THEN PRINT "0"
8400 RETURN

```

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FOR SALE: TS2068 color computer, user manual, in original carton, like new condition. Over 75 pages third party software guide and technical manual, schematic diagram, Aerco centronic printer interface with printer driver and instructions. Textwriter 2000+, Pro/file, Flight Simulator, VuCalc, Checkbook Manager with instructions. Magazines: Sync, Timex Sinclair User, TS Horizons, SUM. All for \$325. Glenn Blizzard, 614 Hollywood Ave., Suffolk, VA 23434.

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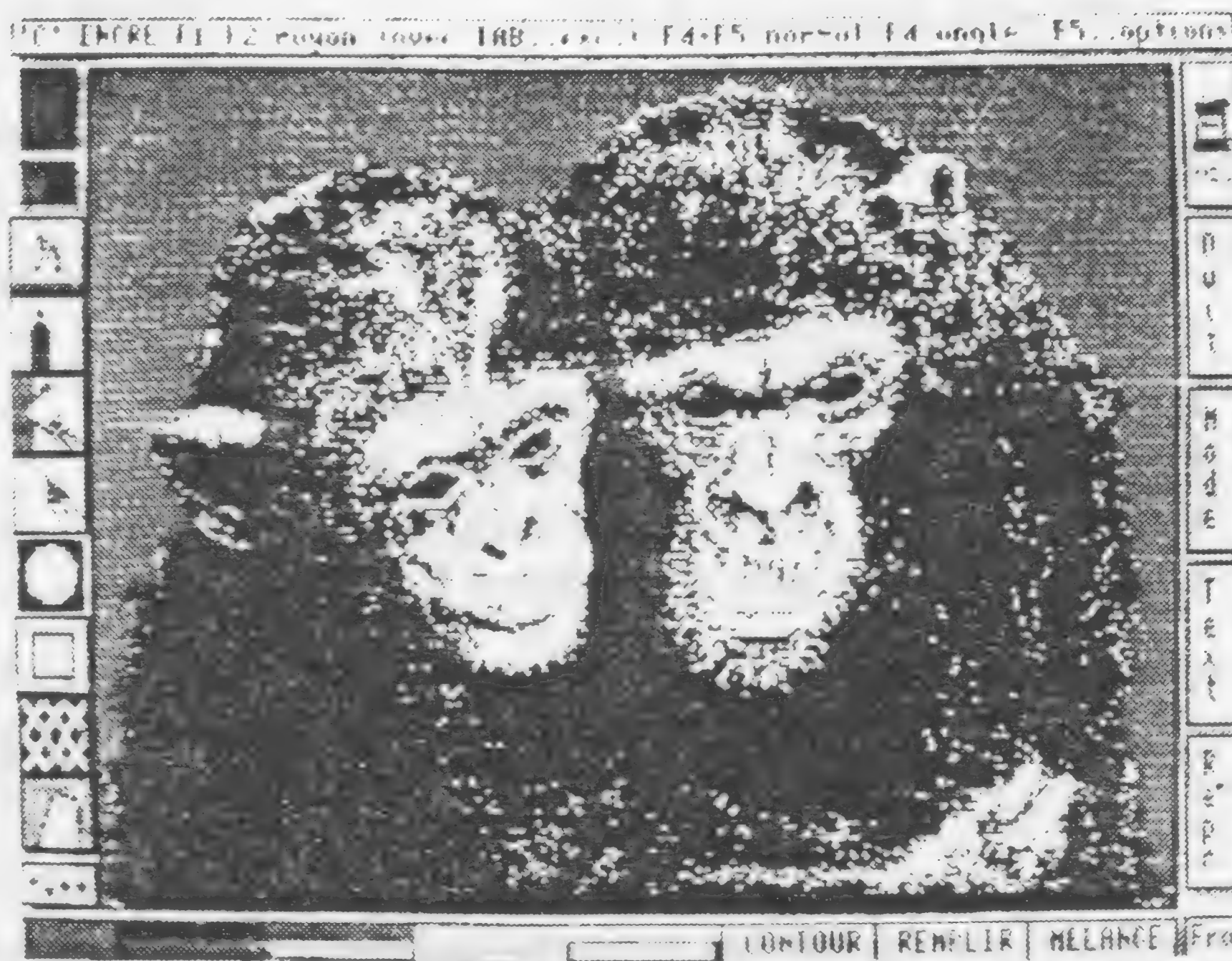
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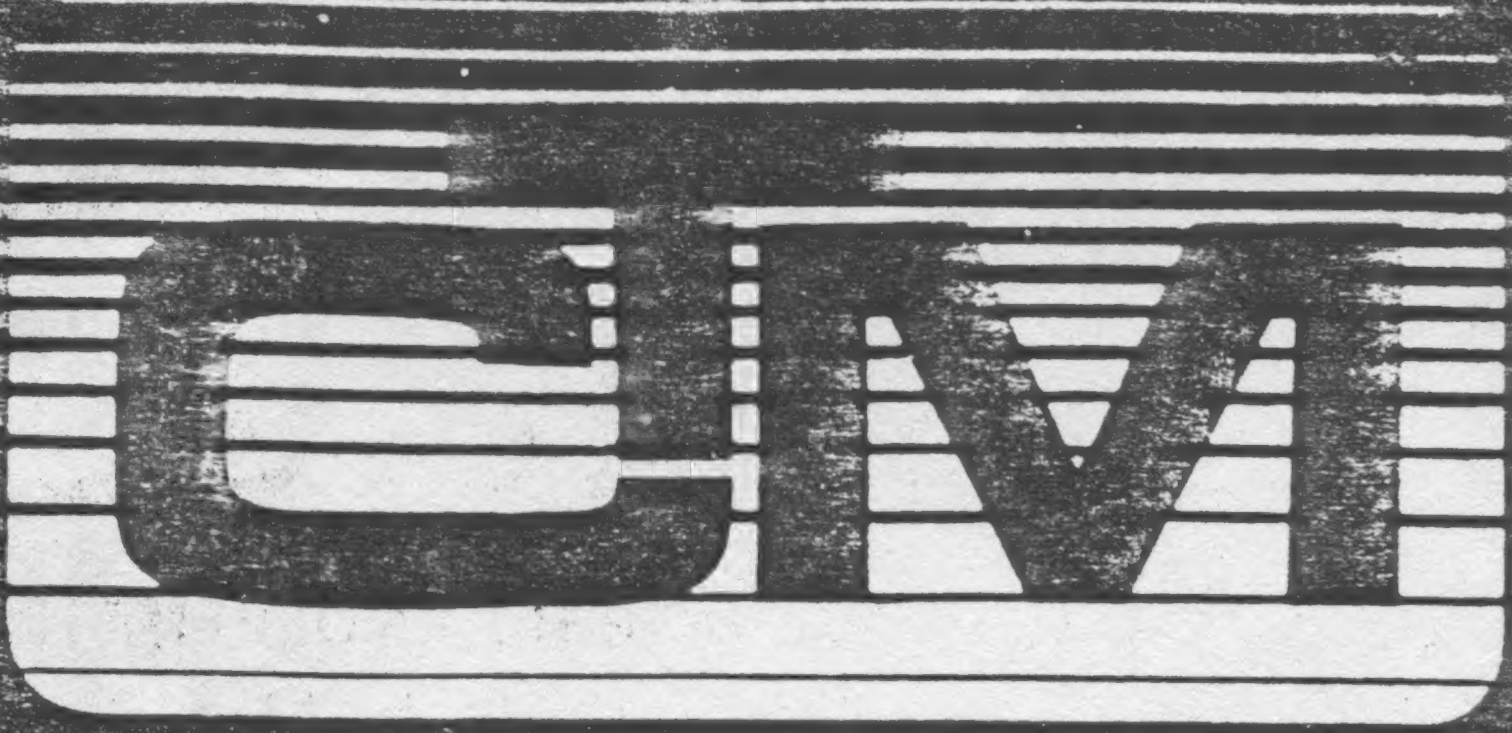
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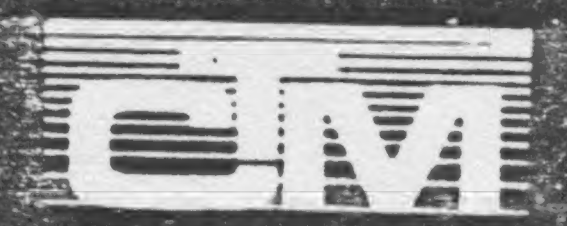
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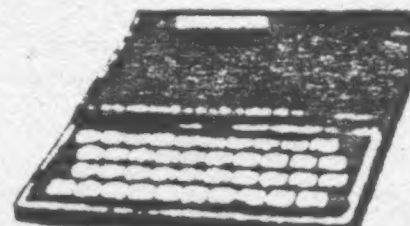
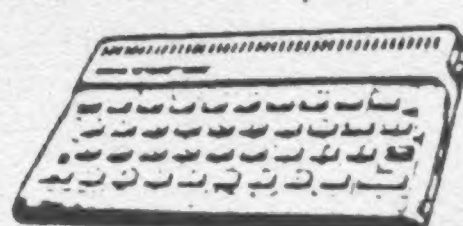
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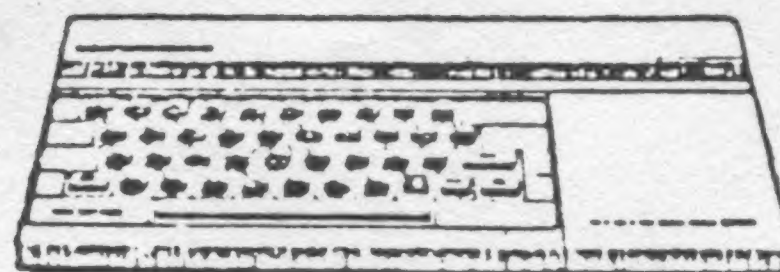
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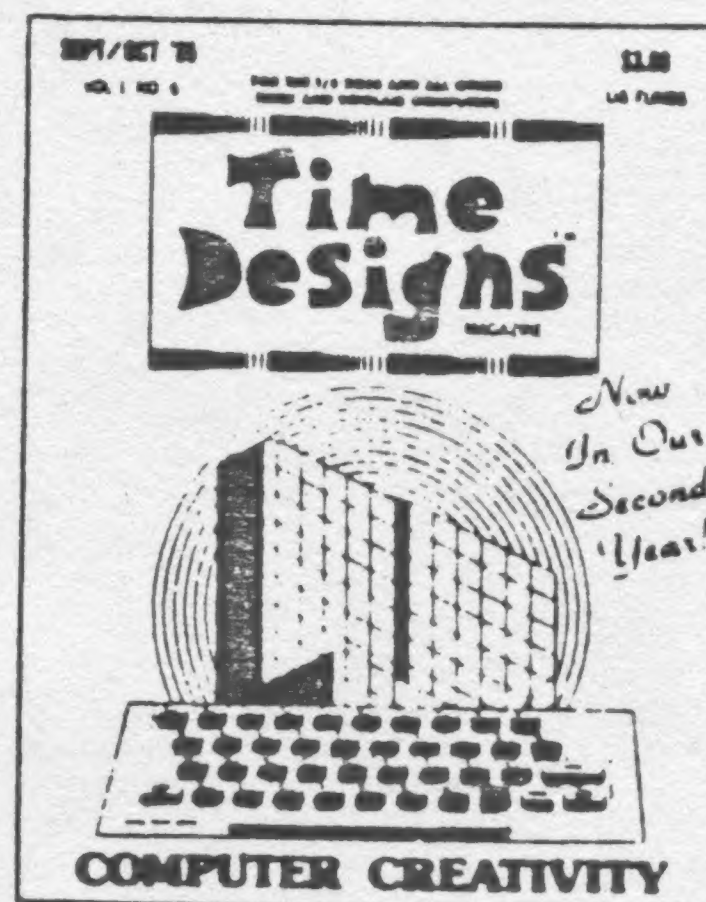


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